Review Article

The Public Health Impact of Antidepressant Medications

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General population surveys often report that only a small proportion of individuals with common mental disorders seek mental health treatment, suggesting a high level of unmet need for mental health care in the community. In recent years, however, the number of adults in industrialized countries who are treated with antidepressant medications has dramatically increased. This paper reviews the public health impact of the increase in the use of antidepressant medications. Whereas some studies suggest a decrease in the incidence of suicide corresponding with the increase in the use of antidepressant medications, other studies do not report such an association. Furthermore, there has been no change in the period prevalence of common mental disorders concurrent with the increase in the use of antidepressant medications. Focusing effort and resources on expanding the capacity of mental health services and improving access to these services without attention to quality, intensity and appropriate targeting of treatments may have limited impact on the mental health of populations.

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> "policies in mental illness care, like other policies, are determined by opinions, whereas outcomes are determined by realities. The challenge is to find ways and means for bringing opinions and realities closer together."
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> Alexander H. Leighton (1)

For many years mental health professionals and researchers have advocated for increased availability of mental health services in the community and improved access to these services for people in need of them (2-4). Increased availability and improved access, they reasoned, would improve the mental health of the communities, prevent adverse outcomes such as suicide and comorbidities, and, ultimately, reduce the prevalence of such common but disabling mental health conditions as major depression and severe anxiety disorders. This argument was in part based on the results of general population surveys which showed that only a small proportion of individuals who meet diagnostic criteria for common mental disorders or who experience significant distress ever seek mental health treatments (2-4), and also based on results of randomized controlled trials of pharmacological and psychosocial treatments which established the efficacy and, in rare cases, effectiveness of these treatments. The argument for expanding services was further bolstered by cost-benefit studies that justified increased spending on mental health care, suggesting that the cost savings from decreased morbidity far exceed the extra cost of treatment (5-7). We have the technology, the argument went, the challenge would be to make this technology more widely available and more easily accessible.

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It now seems that, at least in parts of the industrialized world and with regard to psychotropic medications, we have made progress in overcoming this challenge. Data from community surveys as well as administrative data point to dramatic increases in mental health help seeking and in the use of psychotropic medications over the past two decades (8-12). Data from the two waves of the National Comorbidity Survey (9)-representative surveys of the general population in the United States-showed a dramatic increase in mental health treatment seeking between early 1990s and early 2000s. Among participants with significant psychopathology, 32.9% received treatment in the 2001-2003 period, compared to 20.3% in the 1990-1992 period. Similarly, data from the National Health Interview Survey (11)—an annual survey of the health of general population in the United States—showed that prevalence of any contacts with mental health professionals among individuals with significant psychological distress increased from 29.1% in 1997 to 35.5% in 2002. Similar trends were noted in the Great Britain (8), Canada (12) and Scandinavia (10).

These data also suggest that much of the increase in service use has been due to increase in the use of antidepressant medications and in particular selective serotonin reuptake inhibitors (SSRIs). In Britain, for example, the prevalence of antidepressant medication treatment in depressed women grew from 18% in 1993 to 36% in 2000 (12). The growth was even larger in men—from 12% in 1993 to 34% in 2000. In Canada, the prevalence of antidepressant medication treatment increased from less than 15% in 1994-1995 to 30% in 2000-2001 (12).

A number of factors have likely contributed to this trend, including vigorous marketing strategies of pharmaceutical companies (such as direct advertising to consumers in the United States), proliferation of new antidepressants with fewer side effects, and broadening of the indications for use of these medications by public regulatory boards (e.g., Food and Drug Administration of the United States). Popular media's fascination with the new wonder drugs that promise to cure not only severe mental illness, but also common unhappiness, has probably contributed to the popularity of the new antidepressant medications as well (13, 14).

Whatever the reasons and motives, the increase in utilization of psychotropic medications should be good news. If our assumptions and predictions were correct, we should expect some beneficial effects resulting from the dramatic increase in the use of these efficacious medications, such as a drop in incidence of adverse outcomes associated with serious mental disorders and perhaps a reduction in period prevalence of these disorders.

However, the results of studies so far have been at best conflicting and for the most part disappointing. Some studies from the United States (15, 16), Great Britain (17), Australia (18) and Scandinavian countries (19, 20) reported a negative association between rate of antidepressant use and suicide, suggesting a preventive effect for antidepressants. Whereas, other studies from the United States (21) Iceland (10) and Italy (22) reported no such association. Most of these studies were based on ecological analyses, i.e., based on aggregated or grouped data rather than individual data. Geographical variations and temporal trends in the rates of suicide have been noted independent of the use of antidepressants and may complicate the interpretation of ecological analyses. The association between antidepressant use and suicide is further complicated by reports of increased suicide risk among

children and adolescents treated by antidepressants (23).

If the results of the studies examining the association of antidepressant use and suicide rates are conflicting, results of the studies examining the association of antidepressant use and prevalence of common mental disorders are remarkably consistent (8, 9). There has been no change in period prevalence of these disorders coinciding with the dramatic increase in the use of antidepressants. These results are disappointing and raise doubts about our long-held assumptions and hopes for improving the mental health of populations by simply expanding the services and improving access to these services.

Kessler and colleagues (9) suggested three possible explanations for the finding of no change in prevalence of mental disorders in the United States despite the increase in mental health treatments between early 1990s and early 2000s. First, it is possible that the prevalence of mental disorders would have been higher in early 2000s compared to early 1990s had it not been for an increase in the rate of treatment. Thus, the effect of treatment may have been cancelled out by the temporal rising trend in the prevalence of mental disorders. There is some evidence that the incidence rate of depression in industrialized world is rising due to a cohort effect (24). Younger cohorts tend to have a higher incidence of major depression compared to the older cohorts. The economic recession of late 1990s and early 2000s and the distressing events of 9/11 might also have contributed to the temporal trends in prevalence of common mental disorders in the United States. Second, the poor quality of treatments may have made treatments less effective than would be expected based on the results of efficacy trials. Only a small proportion of individuals who receive mental health treatments in community settings receive treatments that meet the minimum quality standards in terms of duration and intensity (25). Third, only about half of individuals who receive any mental health treatment in a year meet the criteria for a DSM-IV diagnosis. The rest consists of individuals with mild and sub-clinical problems ("worried well"), whose problems may not respond to treatments as robustly as those with serious mental disorders. Thus, the potential impact of treatment on prevalence of serious mental disorders is muted by the inappropriate use of treatments.

Brugha and colleagues (8) who also recorded a dramatic increase in the use of antidepressants in the Great Britain between 1993 and 2000, with no change in the prevalence of common mental disorders in the same period, suggested that limited efficacy of antidepressant medications may explain the stability of prevalence estimates. Based on results of a meta-analysis (26), they estimated that 7 patients with depression needed to be treated for 1 patient to benefit from the treatment. Thus, an 11% increase in the prevalence of treatment of individuals with depression would reduce the prevalence of major depression by only 1.5%—too small a change to be detected in most general population surveys. Brugha and colleagues (8) also noted the negative results of studies evaluating the impact of attempts at increasing the effectiveness of mental health care in primary care settings (27, 28). The few studies that did show improved outcomes employed much more intensive interventions with more frequent patient contacts and focus on long-term compliance with treatments (29, 30), highlighting the impact of intensity and quality of treatments.

Although much of this research comes from industrialized settings, there might be lessons in it for mental health professionals, policy-makers and

researchers in non-industrialized countries, as well. Following the trends in industrialized countries, in non-industrialized countries too the rate of mental health treatment in general, and antidepressant medication treatment in particular will likely rise in the coming decades. With the rising cost of health care, mental health professionals will be increasingly called upon to justify their services by providing evidence of effectiveness of these services. If the mental health care system cannot provide objective evidence for effectiveness of its interventions, it may not fare favorably in comparison with other health care sectors competing for the same scarce resources. As the data reviewed above suggest, increased quantity of services may not have a significant impact on the mental health of the population. Perhaps focusing on expanding services with the aim of increasing availability and access has been shortsighted. The focus, instead, should have been on more careful selection of patients who would benefit from treatments and on improving the consistency and continuity of treatment for these patients. Here, as in most other cases in provision of health care, quality of care may be more important than quantity of services.

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